

**WHAT IS CLAIMED IS:**

1           1.     A field emission display, comprising:  
2           a first substrate;  
3           an electron emission assembly arranged on said first substrate;  
4           a second substrate arranged a predetermined distance from said first substrate, said first and  
5 second substrates forming a vacuum space;  
6           an illumination assembly arranged on said second substrate, said illumination assembly  
7 being illuminated by electrons emitted from said electron emission assembly; and  
8           a mesh grid arranged above said electron emission assembly.

1           2.     The field emission display of claim 1, wherein said mesh grid comprises a metal.

1           3.     The field emission display of claim 1, wherein said mesh grid comprises one of  
2 stainless steel, invar, and an iron-nickel alloy.

1           4.     The field emission display of claim 3, wherein the iron-nickel alloy comprises 2.0  
2 to 10.0 wt% of Cr.

1           5.     The field emission display of claim 3, wherein the iron-nickel alloy comprises 40.0  
2 to 44.0 wt% of Ni.

1           6.     The field emission display of claim 3, wherein the iron-nickel alloy comprises 0.2  
2     to 0.4 wt% of Mn, 0.7 wt% or less of C, and 0.3 wt% or less of Si.

1           7.     The field emission display device of claim 1, wherein the thermal expansion  
2     coefficient of said mesh grid is in the range of  $9.0 \times 10^{-6}/^{\circ}\text{C}$  to  $10.0 \times 10^{-6}/^{\circ}\text{C}$ .

1           8.     The field emission display device of claim 1, wherein electron emission assembly  
2     comprises a cathode and a gate and an electron emission source.

1           9.     The field emission display device of claim 9, wherein said gate is arranged on an  
2     upper side of said cathode.

1           10.    The field emission display device of claim 9, wherein the gate is arranged on a  
2     lower side of said cathode.

1           11.    The field emission display device of claim 1, wherein an intermediate material is  
2     arranged between said electron emission assembly and said mesh grid.

1           12.    The field emission display device of claim 1, wherein said intermediate material  
2     comprises an insulating material.

1           13.    The field emission display device of claim 12, wherein said intermediate material  
2 comprises a resistive material.

1           14.    The field emission display device of claim 1, further comprising a focusing  
2 electrode arranged on said mesh grid.

1           15.    A field emission display device, comprising:  
2           a first substrate;  
3           an electron emission assembly arranged on said first substrate;  
4           a second substrate arranged a predetermined distance from said first substrate, said first and  
5 second substrates forming a vacuum assembly;  
6           an illumination assembly arranged on said second substrate, said illumination assembly  
7 being illuminated by electrons emitted from said electron emission assembly; and  
8           a mesh grid arranged above said electron emission assembly;  
9           wherein said mesh grid is bonded to said electron emission assembly by a frit.

1           16.    A method of manufacturing a field emission display, the method comprising:  
2           providing a first substrate;  
3           arranging an electron emission assembly on said first substrate;  
4           arranging a second substrate a predetermined distance from said first substrate to form a  
5 vacuum space with said first and second substrates;

6           arranging an illumination assembly on said second substrate, and illuminating said  
7           illumination assembly with electrons emitted from said electron emission assembly; and  
8           arranging a mesh grid above said electron emission assembly.

1           17.    The method of claim 16, further comprising forming said mesh grid of a metal.

1           18.    The method of claim 16, further comprising forming said mesh grid of one of  
2           stainless steel, invar, and an iron-nickel alloy.

1           19.    The method of claim 16, further comprising forming a cathode and a gate and an  
2           electron emission source in said electron emission assembly.

1           20.    The method of claim 19, further comprising forming said gate on one of an upper  
2           an lower side of said cathode.

1           21.    The method of claim 16, further comprising forming an intermediate material  
2           between said electron emission assembly and said mesh grid.

1           22.    The method of claim 21, further comprising forming said intermediate material of  
2           an insulating material.

1           23.    The method of claim 21, further comprising forming said intermediate material of  
2   a resistive material.

1           24.    The method of claim 16, further comprising forming a focusing electrode on said  
2   mesh grid.

1           25.    A method of manufacturing a field emission display device, the method  
2   comprising:

3           providing a first substrate;

4           arranging an electron emission assembly on said first substrate;

5           arranging a second substrate a predetermined distance from said first substrate to form a  
6   vacuum assembly with said first and second substrates;

7           arranging an illumination assembly on said second substrate and illuminating said  
8   illumination assembly with electrons emitted from said electron emission assembly;

9           arranging a mesh grid above said electron emission assembly; and

10          bonding said mesh grid to said electron emission assembly with a frit.